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Philadelphia District

PROJECT FACTSHEET

Formerly Utilized Sites Remedial Action Program
DuPont Chambers Works, Deepwater, NJ

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CONGRESSIONAL DISTRICTS: Rep. LoBiondo (NJ-2)

AUTHORITY: The Formerly Utilized Sites Remedial Action Program (FUSRAP) was transferred from the U.S. Department of Energy to the U.S. Army Corps of Engineers by the Energy and Water Development Appropriations Act for FY98 (PL 105-62) in October 1997.

LOCATION: The DuPont Chambers Works site is a 700-acre active chemical plant located in Pennsville and Carneys Point Townships on the southeastern shore of the Delaware River, north of the I-295 Delaware Memorial Bridge, and adjacent to the residential community of Deepwater, in Salem County, New Jersey. The plant is owned and operated by E.I. DuPont de Nemours & Company. Current zoning is industrial. Bordered by the Delaware River to the north and west, land use around Chambers Works is both industrial and residential.

DESCRIPTION: Areas within the DuPont Chambers Works are being investigated and cleaned up under FUSRAP, a program created to address radiological contamination at sites used by DOE's predecessor agencies, the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC), from the 1940s through the 1960s.

DuPont under contract to MED and AEC conducted uranium refinement activities in support of the nation's early atomic energy program. Operations involving uranium at the Chambers Works site began in 1942. As part of its work on the MED program, DuPont worked on developing a process for converting uranium oxide to produce uranium hexaflouride and small quantities of uranium metal. Other research activities were also performed. All MED activities were transferred to the AEC in 1946. DuPont continued its research for AEC until late 1947. In 1948 and 1949, AEC conducted radiological surveys and decontamination of building surfaces at the site primarily at locations of former AEC activities. Using then-existing criteria AEC released the buildings back to DuPont in 1949.

In March 1977, another radiological survey was conducted by Oak Ridge National Laboratory (ORNL). The 1977 results indicated that uranium was present in the environment above current action levels and resulted in the designation of Chambers Works as a FUSRAP site. In 1983, DOE contracted with Bechtel National Inc. (BNI) and its radiological subcontractor, Eberline Analytical Corp (EAC) to conduct a designation survey to define the locations and boundaries of MED contamination. The survey was not conducted sitewide. The areas investigated were those determined to be of interest through review of historical MED documents. Six separate Areas of Concern were identified and surveyed: (1) Building 845 (interior and exterior), (2) Historical Lagoon A, (3) F Corral Parking Area, (4) Building J-16 area, (5) Central Drainage Ditch and (6) East Area.

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As an operating chemical manufacturing facility, DuPont Chambers Works is permitted in accordance with Resource Conservation and Recovery Act (RCRA) requirements. Currently DuPont is conducting RCRA corrective actions under an Administrative Consent Order (ACO) with the State of New Jersey, Department of Environmental Protection (NJDEP) to address chemical contamination onsite. Under the ACO, DuPont has collected and documented radiological constituents in water samples in the course of pumping and treating groundwater at the site.

In January 1997 DuPont filed a lawsuit against various government agencies regarding Potentially Responsible party (PRP) determinations for both radiological and chemical (non-radiological) contamination at the site. In August 1998 the Corps and DuPont executed a General Release Agreement removing FUSRAP activities at the site from the nationwide litigation.

STATUS: The Six Areas of Concern (AOCs) mentioned above have been investigated by the Corps as part of a site-wide Remedial Investigation to evaluate any residual radiological contamination resulting from MED operations at Chambers Works. The AOCs are former sites of uranium production processes, drainage areas leading from production areas, and potential MED waste disposal areas. Figure 1 [SEE LAST PAGE] shows the location of these areas and brief site descriptions are provided below:

(1) AOC 1, Former Building 845 Area (Miscellaneous Stores Bldg.) – The former building was a four-story, 50,000 - square foot steel frame structure located in the northwest quadrant of the Chambers Works site. During MED operations uranium recovery processes were conducted in this building. MED work in Building 845 consisted of the recovery of uranium from scrap and other by¬products. Wastes from these recovery processes were discharged to the wooden trough located east of the building that ultimately discharged to the Central Drainage Ditch (CDD). DOE performed interior surface decontamination of the building in 1996. In 1999 DuPont completed demolition of the building and the Corps disposed of the structural steel containing fixed radiological contamination. Field investigations have confirmed uranium in shallow soils and groundwater beneath the footprint of the former building to a depth of four feet below ground surface.

(2) AOC 2, F Parking Corral – Currently the area is a paved parking lot area that was built over the site of former Building 708. During MED operations uranium refinement processes occurred in Building 708. The former building was located in the northeast portion of the parking corral. In 1945, part of Building 708 was demolished and removed from the site. In 1953 the remainder of the building and some underlying soil were removed and disposed of near the Historical Lagoon A. Field investigations have confirmed uranium in shallow soils and groundwater beneath the footprint of the former building.

(3) AOC 3, Central Drainage Ditch 16 – The Central Drainage Ditch (CDD) was used to transfer process wastes from production areas to the lagoon complex during the MED operational period. The portion of the CDD that ran in between AOC 1 and AOC 2 was remediated by

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DuPont in 1997 to address lead contamination in soils as part of a RCRA corrective action. An independent verification study performed for DOE confirmed that the chemical remediation that DuPont conducted removed radiological contamination in soils to sufficiently low levels. Recent field investigations were completed in 2003 and no significant radiological contamination was found. The highest detected uranium concentration was 98 picoCuries/gram (pCi/g), collected from a sediment sample near the former Building 845. No filtered groundwater samples exceeded the maximum contaminant level for uranium. No further action is anticipated.

(4) AOC 4, Historical Lagoon A – This is the site of a former wastewater lagoon complex. Lagoon A historically received wastewater from Chambers Works, including MED operational areas. The CDD connected the lagoon with MED production areas. During backfilling activities, MED building debris, rubble, and soil were deposited in some areas, including the North Burial Area. Field investigations have confirmed uranium impact to soils and groundwater.

(5) AOC 5, Former Building J-16 – This building was used as a research laboratory conducting batch experiments for uranium refinement during MED operations. The building, used by Jackson Labs, was demolished in the mid 1950s. At that time the foundation and several feet of underlying soil were removed. DuPont then constructed Building J-26 over the footprint of Building J-16. Field investigations were conducted within the footprint of the building and the former drainage ditch that surrounded the building and received waste from it. Investigations were completed in 2003 concluding that no significant radiological contamination existed in this area. MED uranium was not encountered in soil and groundwater samples.

(6) AOC 6, East Area – The East Area is a large DuPont production area and was used to manufacture chlorinated solvents and lubricants under contract with MED. The East Area contains a disposal area for demolition debris and discarded equipment from MED production areas and other DuPont processes. This disposal area, designated the East Burial Area, is located adjacent to and north of East Road. Previous radiological surveys of this area have indicated elevated concentrations of uranium. Field investigations in 2004 – 2006 have confirmed limited impact to soils and groundwater.

COMMUNITY INVOLVEMENT: The Corps held a public meeting in June 1999 and presented an overview of the FUSRAP program, DuPont site history, technical information on radiological contamination at the site, and objectives of the community involvement program. Additional meetings and presentations were made in August 1999 to the elected officials of Penns Grove, Carney's Point, and Pennsville, NJ and to the Salem County Board of Freeholders. The first issue of the project newsletter, The Bulletin, was issued in September 1999 and included information about the Corps' intent to establish a Restoration Advisory Board (RAB). Interested residents, community leaders, and officials were asked to consider serving on the RAB. The RAB provides a communications forum that encourages dialogue between Corps,

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NJDEP, EPA, and DuPont representatives and the community. The RAB was formed in spring 2000 and currently includes 16 members. The RAB continues to remain active and typically meets 3 times a year to discuss program activities and community concerns.

The Corps has held several partnering meetings with DuPont, NJDEP, EPA representatives and technical project planning (TPP) meetings with Corps personnel and technical team representatives. A technical team website was developed for the project and facilitates program communications and technical review of documents. In addition, the Corps is in the process of updating its FUSRAP website to improve the community's access to site information. The website for the Chambers Works FUSRAP site is http://fusrap.eaest.com.

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